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EXAMINER				
KAO, JUTAI				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/552,882

Applicant(s)

LEE ET AL.

Examiner

JUTAI KAO

Art Unit

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 08/18/2008 have been fully considered but they are not persuasive.

Regarding the drawings, as shown in 37 CFR 1.83 (a), the drawings must show every feature of the invention specified in the claims. Although the features are clearly understood by the claims and the specifications, the claimed features must still be shown in the drawings.

Regarding the 35 USC 103(a) rejections, the applicant argues the following on page 5 of the remark:

"The Examiner states that Rom discloses "a controller for registering, as a user value, traffic volume for each of said plurality of ports in an internal register" (emphasis added). Here, the Examiner refers to counters 1 to N in Fig. 3 of Rom as being equivalent to the claimed "internal register" 410 in the invention. However, counters 1 to N actually count the number of data packets that are currently present for each of the ports 1 to N. Hence, counters 1 to N more accurately reflect the packet counter registers for storing and counting information packets 510 in the claimed invention. This is acknowledged by the Examiner, on page 4 of the Office Action, where counter 1 to N is viewed as equivalent to counters 510 in the instant invention. Indeed, it appears that the Examiner is citing counters 1-N and Fig. 3 for both the packet counter registers and the internal register. As noted, the claimed invention, on the other hand, distinguishes between the counter registers (510) and the internal registers (410), each of which have different tasks and are arranged as two separate, independent devices. Additionally, Rom fails to disclose that "the value used to compare against the port traffic count value is a user value", as required by the claimed invention and admitted to by the Examiner.

Ng is cited by the Examiner as disclosing a method for network storage flow control including "the value used to compare against the port traffic count value is a user value...[and] entering a user value for a maximum traffic volume", which is not disclosed by Rom. It is noted that the claims require that there are two different values (the two values that are compared with each other) and, therefore, two different registers".

However, as agreed by the applicant, the previous rejection does show both the internal registers and the packet counter registers. As shown in the applicant's argument and the previous action, the previous rejections show a plurality of registers (counters 1-N) which are capable of performing the tasks of both the claimed internal registers and the packet counter registers. Therefore, counters 1-N are used to read on both claimed limitation. Even though the drawings or the specification may have distinguishes between the internal registers and the packet counter registers, the claim limitations never distinguishes these registers are separate entities. The claim only requires the existence of such registers and distinguishes them only by their functionality, not their physicality. Thus, counters 1-N, which are capable of performing the functionality of both types of the claimed registers, can be used to read on the claim limitations.

Secondly, as shown by the previous action, although Rom does not teach that the compared value involves a user value, Rom does show the comparison or two different values. This is shown in on page 4-5 of the previous action, which includes the following texts:

"comparing a user value for each of said plurality of ports with a value in a respective one of said packet counter registers for said each port so as to output said input traffic control command for said each port to said switching processor (see "When the level of

occupancy of a portion of the buffer allocated to an input port exceeds a first level or threshold, the switch provides a control signal to the upstream sources operably coupled to the input port to inhibit information packet transmissions to the input port" recited in column 5, lines 45-50)".

As shown above, the two values that are compared includes "the level of occupancy of a portion of the buffer", which is represented by the values of counters 1-N, and "the first level or threshold". Rom does not explicitly mention that this first threshold is a user value. Therefore, Ng is included to show that this threshold may be set by the user, and therefore could be a user value, as required by the claim limitations. Therefore, the combination of Rom and Ng does indeed show the claimed limitations and the argument presented by the applicant is not considered persuasive.

2. Applicant's arguments filed 01/26/2009 regarding the objections to the drawings have been fully considered but they are not persuasive.

The applicant argues the following on page 5 of the amendments:

"The drawings have been objected to in the Office Action as failing to show every feature of the claims. Applicants respectfully traverse the objection. There is no requirement that every feature of the claims be illustrated in the drawings. Here, the drawings clearly illustrate the invention, and the language referenced by the Examiner as not disclosed in the drawings is clearly supported in the specification and understood by the clear meaning in the claim itself. The Examiner is requested to withdraw the objection".

CFR 1.83(a) states the following: "The drawing in a nonprovisional application **must show every feature of the invention specified in the claims.** However, conventional features disclosed in the description and claims, where their detailed

illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box). In addition, tables and sequence listings that are included in the specification are, except for applications filed under 35 U.S.C. 371, not permitted to be included in the drawings".

That is, according to CFR 1.83(a), every feature of the invention specified in the claims must be shown in the drawings. Even if the features are conventional, the feature should still be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation. Therefore, the objections are maintained.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on 04/21/2003. It is noted, however, that applicant has not filed a certified copy of the foreign application as required by 35 U.S.C. 119(b).

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of comparing traffic count register and the user value and the resulting control signal must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claim 8-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rom (US 6,252,849) in view of Ng (US 2004/0049564).

Rom discloses a flow control mechanism using output port buffer allocation including the following features.

Regarding claim 8, an apparatus (see apparatus 201 shown in Fig. 2 and apparatus 301 in Fig. 3) for controlling traffic over a network (see network shown in Fig. 1), comprising: a switching processor, including a plurality of ports connectable to a network line (see plurality of output ports and input ports in Fig. 2 and Fig. 3) and packet counter registers for storing counting information on packets (see counter 1-N in Fig. 3) ingressed and egressed (see "Counter 2 is incremented in response to an information packet received from input port 2 being admitted into buffer 305. Counter 2 is decremented in response to an information packet received from input port 2 and held in buffer 305, being transmitted from output port 301" recited in column 4, lines 60-65) and for controlling ingress and egress packet traffic volume for each of said plurality of

ports in response to an input traffic control command (see "A PAUSE frame is provided to an information packet source by a downstream destination to inhibit transmission of information packets such as information frames by the information packet source to the downstream destination for a specified period of time" recited in column 5, lines 8-12); and a controller for registering, as a user value, traffic volume for each of said plurality of ports in an internal register (see Counters 1-N in Fig. 3, for counting the traffic volume), said traffic volume being inputted through a data input unit (see above, counter incremented when packets being inputted to the buffer), and for comparing a user value for each of said plurality of ports with a value in a respective one of said packet counter registers for said each port so as to output said input traffic control command for said each port to said switching processor (see "When the level of occupancy of a portion of the buffer allocated to an input port exceeds a first level or threshold, the switch provides a control signal to the upstream sources operably coupled to the input port to inhibit information packet transmissions to the input port" recited in column 5, lines 45-50) .

Regarding claim 10, an apparatus (see apparatus 201 shown in Fig. 2 and apparatus 301 in Fig. 3) for controlling traffic over a network (see network shown in Fig. 1), comprising: a switching processor, including a plurality of ports connectable to a network line (see plurality of output ports and input ports in Fig. 2 and Fig. 3) and packet counter registers for storing counting information on packets (see counter 1-N in Fig. 3) ingressed and/or egressed (see "Counter 2 is incremented in response to an information packet received from input port 2 being admitted into buffer 305. Counter 2

is decremented in response to an information packet received from input port 2 and held in buffer 305, being transmitted from output port 301" recited in column 4, lines 60-65) and for controlling ingress and/or egress packet traffic volume for said plurality of ports in response to an input traffic control command (see "A PAUSE frame is provided to an information packet source by a downstream destination to inhibit transmission of information packets such as information frames by the information packet source to the downstream destination for a specified period of time" recited in column 5, lines 8-12); and a controller for registering, as a user value, traffic volume for said plurality of ports in an internal register (see Counters 1-N in Fig. 3, for counting the traffic volume), said traffic volume being inputted through a data input unit (see above, counter incremented when packets being inputted to the buffer), and for comparing a user value for said plurality of ports with a value in a respective one of said packet counter registers for said plurality of ports so as to output said input traffic control command for said plurality of ports to said switching processor (see "When the level of occupancy of a portion of the buffer allocated to an input port exceeds a first level or threshold, the switch provides a control signal to the upstream sources operably coupled to the input port to inhibit information packet transmissions to the input port" recited in column 5, lines 45-50) .

Regarding claims 9 and 12-13, wherein said input traffic control command is a control command that enables said packets ingressed or egressed through said port to be queued, dropped or paused (see "PAUSE" command recited in column 5, lines 8-12).

Regarding claim 14, a method for controlling a traffic volume ingressed or egressed via a port or a plurality of ports of a switching processor (see apparatus 201 in Fig. 2 and apparatus 301 in Fig. 3), comprising the steps of comparing a user value with a respective value of said traffic volume (see "When the level of occupancy of a portion of the buffer allocated to an input port exceeds a first level or threshold, the switch provides a control signal to the upstream sources operably coupled to the input port to inhibit information packet transmissions to the input port" recited in column 5, lines 45-50; where the user value is the first threshold and the respective value is the level of occupancy of the buffer), said respective value being written in a packet counter register (see Counters 1-N in Fig. 3), and issuing a traffic control command to said switching processor (see "When the level of occupancy of a portion of the buffer allocated to an input port exceeds a first level or threshold, the switch provides a control signal to the upstream sources operably coupled to the input port to inhibit information packet transmissions to the input port" recited in column 5, lines 45-50).

Rom does not disclose the following features: regarding claims 1 and 2, wherein the value used to compare against the port traffic count value is a user value; regarding claim 5, entering a user value for a maximum traffic volume.

Ng discloses a method for network storage flow control including the following features.

Regarding claims 8 and 10, wherein the value (the threshold value as shown above in Rom's invention) used to compare against the port traffic count value is a user value (see "Flow control user interface...can also be used for setting threshold levels"

recited in paragraph [0072], that is, the user could use Ng's interface to set the threshold value).

Regarding claim 14, the method comprises the step of entering a user value for a maximum traffic volume (see "Flow control user interface...can also be used for setting threshold levels" recited in paragraph [0072], that is, the user could use Ng's interface to set the threshold value).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Rom using features, as taught by Ng, in order to provide enhanced control flexibility to the system.

8. Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rom (US 6,252,849) in view of Ng (US 2004/0049564) as applied to claims 10 and 14 above, and further in view of Wang (US 2004/0151184).

Rom and Ng disclose the claimed limitations as explained above.

Rom and Ng do not disclose the following features: regarding claim 11 and 15, wherein said ingress and/or egress traffic volume is controlled via a token bucket, which is shared between the ports of said plurality of ports.

Wang discloses a class-based rate control using multi-threshold leaky bucket including the following features.

Regarding claim 11 and 15, wherein said ingress and/or egress traffic volume is controlled via a token bucket, which is shared between the ports of said plurality of ports (see "each packet received from the network access device 108 removes token from a

bucket input buffer 114..." recited in paragraph [0009]; that is, a token bucket is used to control the buffer representing the total traffic volume).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rom and Ng using features, as taught by Wang, in order to control the data rate at the claimed apparatus.

9. Claims 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rom and Ng as applied to claims 14 above, and further in view of Rose (US 2004/0205228) and Raphaeli (US 2003/0103521).

Rom and Ng discloses the claimed limitations as explained above.

Rom and Ng do not disclose the following features, regarding claim 16, wherein a packet is dropped by setting the frame size parameter smaller than the minimum Ethernet frame size.

Rose discloses an apparatus for detecting tiny fragment attacks including the following features.

Regarding claim 16, wherein a packet is dropped by setting the frame size parameter smaller than the minimum Ethernet frame size (see "filter 100 will drop any frame it receives if...the calculated Length 1 is less than 16 bytes" recited in paragraph [0018], that is, Rose sets a frame size parameter of 16 bytes, and dropping packets contained in frames smaller than that size).

Raphaeli discloses a channel access method for powerline carrier based media access control protocol including the following features.

Regarding claim 16, wherein the minimum Ethernet frame size is 64 bytes (see “as small as 64 bytes (corresponding to the minimum Ethernet frame size)” recited in paragraph [0026], which shows that the 16 bytes parameter in Rose's invention is smaller than the minimum Ethernet frame size, as required by the claim).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Rom and Ng using features, as taught by Rose and Raphaeli, in order to prevent tiny data fragment attack of the system.

10. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rom, Ng and Wang as applied to claim 15 above, and further in view of Rose (US 2004/0205228) and Raphaeli (US 2003/0103521).

Rom, Ng and Wang discloses the claimed limitations as explained above.

Rom, Ng and Wang do not disclose the following features, regarding claim 17, wherein a packet is dropped by setting the frame size parameter smaller than the minimum Ethernet frame size.

Rose discloses an apparatus for detecting tiny fragment attacks including the following features.

Regarding claim 17, wherein a packet is dropped by setting the frame size parameter smaller than the minimum Ethernet frame size (see “filter 100 will drop any frame it receives if...the calculated Length 1 is less than 16 bytes” recited in paragraph

[0018], that is, Rose sets a frame size parameter of 16 bytes, and dropping packets contained in frames smaller than that size).

Raphaeli discloses a channel access method for powerline carrier based media access control protocol including the following features.

Regarding claim 17, wherein the minimum Ethernet frame size is 64 bytes (see "as small as 64 bytes (corresponding to the minimum Ethernet frame size)" recited in paragraph [0026], which shows that the 16 bytes parameter in Rose's invention is smaller than the minimum Ethernet frame size, as required by the claim).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Rom, Ng and Wang using features, as taught by Rose and Raphaeli, in order to prevent tiny data fragment attack of the system.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ju-Tai Kao

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Acting Examiner of Art Unit 2416

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